

ABSTRACT OF THE DISCLOSURE

In a wavelength division multiplexed (WDM) optical communication system having a plurality of optical transmitters and optical receivers communicating via a plurality of optical communication channels, the bit error rate (BER) for all of the optical communication channels is tested simultaneously by connecting all of the optical communication channels together in a chain to form a single continuous communication path and performing a single BER measurement for the cascaded chain. A BER test signal is supplied from a BER tester to a first optical transmitter in the cascaded chain. The BER test signal passes through all of the optical communication channels and is supplied from the last optical receiver in the cascaded chain to the BER tester which measures the BER of the cascaded chain. The measured BER of the cascaded chain is compared to a predetermined system BER threshold to determine if the optical communication channels meet their specified BER values. Each optical transmitter and optical receiver in the WDM optical communication system includes an on-board performance monitoring circuit which monitors the quality of the bit error rate signal which is supplied to the optical transmitter/receiver for identifying one or more optical communication channels which are out of specification in the event that the measured BER of the cascaded chain exceeds a predetermined system BER threshold.